R&D Budgets: Congress Leaves a Parting Gift

Basic research, particularly at NIH, continues to garner strong federal support, but major physics programs got pinched

After weeks of struggle, Congress has passed a $576-billion continuing resolution to fund the federal government in fiscal year 1987. Most basic research programs have emerged from the agonizing budget drama in good shape. But what may be most significant about the extended budget debate is that it could mark the demise of the Gramm-Rudman-Hollings deficit reduction law, which is supposed to reduce annual budget deficits to zero by 1992.

The massive spending bill is estimated to result in a budget deficit in FY 1987 of more than $154 billion, the outer bound of the Gramm-Rudman deficit target. The law calls for reducing the annual deficit to $144 billion, a goal that legally can be stretched to $154 billion before Congress is supposed to step in and sequester funds to ensure the target is met. But this year, Congress chose to ignore statutory deadlines for imposing the sequester mechanism.

Furthermore, the budget reconciliation process, which is supposed to square expenditures and revenues with the deficit goal, does so only in a technical sense. While Congress came up with $11.7 billion in savings to bring the deficit under the $154-billion mark, they are largely one-time credits based on the sale of assets. It is doubtful that all these asset sales will come to fruition, thus the actual deficit may exceed $170 billion.

Despite repeated warnings in the past month that the White House would veto the continuing resolution, President Reagan chose not to. The approach of congressional and senatorial elections no doubt played a part in the White House's decision to accept the package even though it contained provisions that the Administration opposed.

The National Institutes of Health has emerged as a big winner in the budget wars, getting $6.18 billion, almost $1.2 billion more than the Administration originally proposed. Part of the increase will be used to raise the number of research grants awarded annually from about 6100 in 1986 to 6200 in 1987. Four percent of the agency's budget, some $247.9 million, is earmarked for research on acquired immune deficiency syndrome (AIDS). This is more than $100 million above the 1986 appropriation for AIDS research at NIH.

In contrast the Department of Defense's (DOD) $290-billion budget is $30.3 billion less than the White House wanted. The Strategic Defense Initiative (SDI), popularly known as "Star Wars," took a particularly large cut. It is budgeted at $3.2 billion—$1.7 billion less than sought by the President. Another $200 million also is budgeted for a related effort, the Conventional Defense Initiative, a new program that seeks to apply SDI technologies to conventional weapons. DOD is instructed by Congress to develop a plan for using the emerging technologies.

DOD's University Research Initiative, a program begun in 1986, is funded at $8.75 million, as opposed to the $12.4 million requested. Nevertheless, the conference committee that drafted the final version of the spending bill emphasized that increased funding will be necessary for this program and related programs in various branches of the armed services. The committee has told DOD to submit by 15 March 1987 a 5-year plan for providing "sustained real growth" for these programs.

Furthermore, the conferees ordered the department to submit a separate report by 1 March detailing its current peer review process and analyzing the potential for expanding DOD-funded research activities into all sectors of the university community. This is a response to complaints by some members of Congress who have sought funds for their local universities on the grounds that research money is currently concentrated in a few major institutions. The appropriations committees say they need to be sure "the allocation of university funding is working effectively."

On another matter that has received widespread attention, Congress has budgeted $110 million in 1987 for development of the National Aerospace Plane, an aircraft that is designed to reach low earth orbit. The SDI program is being tapped for $10 million of that budget. A hold, however, is placed on half the funding until the Secretary of Defense certifies that the National Aeronautics and Space Administration (NASA) has agreed to shoulder a larger share of the development costs, and that there is broader industry cost sharing. The revised funding program must be submitted to the House and Senate appropriations committees by 1 August 1987. NASA already has agreed to share 20% of the space plane's development costs.

NASA's budget of $7.95 billion includes $3.1 billion for research and development. Some $2.7 billion of the remainder is devoted to construction of a new space orbiter and shuttle-related operations. The rest will go for space and ground network operations and replacement of the Tracking and Data Relay Satellite, which was to have been launched by the Challenger.

Agency concerns about having programs such as the Space Station, Advanced Communications Technology Satellite, and other research activities slowed because of burdensome shuttle facility operations costs have been allayed. Congress has provided an additional $265 million to cover that expense.

The Department of Energy's budget for 1987 is approximately $12 billion, the same as requested by the President. While DOE spending has declined overall from $12.2 billion in 1986, expenditures for weapons activities have increased to $7.47 billion. This budget, which is $240 million above 1986 levels, includes $317 million for SDI-related activities. Basic energy research expenditures also are rising—to $536.67 million, $33 million above the level recommended by the House Appropriations Committee and far above the $441.3 million recommended by the Administration.

High energy physics has not fared as well. Congress appropriated $524 million, $22 million less than recommended. It also imposed a general reduction of $35 million across the high energy and nuclear physics programs. About $25 million of that is expected to come from high energy physics research, a reduction that could affect operations at Fermi National Accelerator Laboratory and the Stanford Linear Accelerator Center. Another $10 million will be cut from the nuclear physics program, which is currently budgeted at $216 million, up from $164 million in 1986. The Administration had proposed a $224-million budget, in part to fund construction of the Continuous Electron Beam Accelerator Facility. Prior to proceeding with continued research on the Superconducting Super Collider, DOE must report to Congress on how the work will be financed. The Magnetic Confinement Fusion program was funded at $345 million, down from the $365 million provided in the past year.

The National Science Foundation's 1987 budget is $1.622 billion, about $63 million less than the Administration requested. Some $1.406 billion is slated for research. The agency is instructed by Congress to maintain research spending for the women and minorities program at $11 million, ocean sciences at $133.6 million, global geosciences at $35 million, and astronomical sciences at $85 million. NSF also is directed to dispense $500,000 in funds earmarked for the Vienna-based International Institute for Applied Systems Analysis in fiscal year 1986, and to allocate the same amount to the organization in 1987.

The Environmental Protection Agency's research budget is $202.5 million (excluding salaries and expenses), down from the 1986 level of $210 million. Congress has nevertheless directed the agency to add funds to specific research efforts: $3 million for exploratory research in areas such as ozone depletion, $2.5 million for the Hazardous Waste Management Center at Tufts University located in Cambridge, Massachusetts, and $3 million for the Health Effects Institute. The institute administers a research program on automotive air pollutants, which is funded jointly by EPA and industry. EPA's overall budget for 1987 is $5.355 billion as compared to a White House request of $4.15 billion.

After the House Appropriations Committee declined to fund the National Bureau of Standards' proposed cold neutron source in July (*Science*, 11 July, p. 153) the outlook for the $27-million project appeared bleak. Congress, however, at the urging of Senator Slade Gorton (R–WA) has agreed to provide $4.5 million in start-up funding. It instructs NBS to raise another $2 million from other sources—public or private. This funding will enable construction of the facility to proceed. The machine is designed to provide low-velocity neutrons for materials research. Meanwhile, the budget for overall NBS operations in 1987 stands at $122 million. This is up from the $118.7 million allocated in 1986, but still falls below the 1985 budget of $123 million.

The Agricultural Research Service at the Department of Agriculture is slated to receive $499.6 million in 1987—less than the $513 million requested. Competitive research grants are funded at $40.65 million, half of which is designated for biotechnology. The House-Senate conference agreement also provides $28 million for special research grants issued through the Cooperative State Research Service (CSRS), an increase of more than $1 million above House or Senate proposals. CSRS's total for 1987 is $300.6 million, up almost 10% from last year and $54 million more than requested. ■

MARK CRAWFORD

Toxic Waste, Energy Bills Clear Congress

Languishing environmental, energy, and education bills pass in the session's final days as Congress molds 1987 budget

In the closing days of the 99th Congress a handful of important bills managed to squeak through despite many legislators' preoccupation with the 1987 budget. Had Congress' scheduled 3 October adjournment not been delayed for 15 days by budget deliberations, months of work on toxic waste, clean water, and energy conservation legislation might have been lost. But even after an extended stay in Washington, work on issues such as the regulation of pesticides, acid rain control, and nuclear reactor liability was left unfinished. These matters now must be taken up in new legislation to be introduced when Congress convenes in January.

Hazardous wastes. The Reagan Administration had threatened to veto the $8.5-billion Superfund Amendments and Reauthorization Act (HR 2005), which provides for the cleanup of hazardous wastes through 1991. As Congress was getting ready to adjourn, however, the White House ceased complaining that the legislation violated Administration policy opposing new taxes. The scouring of waste sites will be financed by $7.25 billion in new taxes on gasoline sales, petroleum imports, chemical feedstocks, and corporate profits. The remaining $1.25 billion must come from existing federal revenue sources.

Reactor liability is expected to top the nuclear agenda for the House Interior and Energy and Commerce committees next spring.

In its first 5 years, the waste disposal fund operated on a budget of $1.62 billion. Without an extension of the act, work at 100 waste sites could have ceased. The reauthorized law sets new standards on how waste site cleanups are to be conducted. It also specifies that cleanup work must commence on 375 waste disposal sites within 5 years. The stipulations apply to cleanups conducted by the government, as well as by private companies.

Pesticide regulation. The reauthorization of the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) collapsed, despite passage in both the House and Senate. The legislation (HR 2482) got snagged over several critical issues: a plan to transfer liability from farmers to pesticide manufacturers when the chemicals are used in accordance with product labels, the right of states to set standards for pesticide residues in foods that are more stringent than federal rules, and the extension of product patent lives to account for regulatory delays. Earlier this year, passage of the legislation seemed assured because industry and environmentalists had reached an agreement on a range of issues related to the bill (*Science*, 4 April, p. 16).

Acid rain. Efforts to control acid rain by reducing sulfur dioxide and nitrous oxide emissions from old power plants and industrial facilities will begin again in 1987. Despite the opposition of the House Energy and Commerce Chairman John Dingell (D–MI), Representative Henry A. Waxman (D–CA) proceeded with hearings on his acid rain legislation (HR 4567) in the final month of the session. Waxman plans to move quickly with a new bill in the spring. Senator Robert T. Stafford (R–VT), chairman of the Environment and Public Works Committee, is expected to introduce a new acid rain bill next year, too.

Nuclear liability. A drive to extend the nuclear power industry's maximum liability for any single accident from $665 million as now provided by the Price-Anderson Act to $6.5 billion also failed in the final weeks of the 99th Congress. The bill (HR 3655) died in the House because of a deadlock between Representatives Morris K. Udall (D–AZ), chairman of the House Interior Committee and Edward J. Markey (D–MA), chairman of the Energy subcommittee on energy conservation and power. They could not agree on a strategy for moving the bill on the House floor. Udall wanted the legislation taken up without being subject to amend-